

YUCHEN LU

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EDUCATION

University of Michigan

Aug 2024 – Jan 2026

M.Eng. in Electrical and Computer Engineering, EECS Department

GPA: 3.87/4.00; Focus: Data Science and Machine Learning

Nanjing University

Sep 2020 – Jul 2024

B.E. in Electronic Science and Engineering, National Model Microelectronics Institute

Merit Scholarships (2021, 2023); Mathematical Contest in Modeling (MCM), *Meritorious Winner*

PUBLICATIONS & MANUSCRIPTS

Yuchen Lu, Julian McAuley, and Lei Zhang. *Pack Light, CarryOn: Building Object-Oriented Context for Long-Horizon Agents*.

Manuscript under review. [arXiv] [Project Page]

RESEARCH EXPERIENCE

University of California, San Diego

Jun 2026 – Present

CarryOn: Object-Oriented Context Management for Long-Horizon Agents

Research Intern; Advisor: Prof. Julian McAuley

- Proposed an object-oriented approach to long-horizon context management, organizing agent continuation around reusable task objects rather than accounts of past interactions.
- Designed and implemented **CarryOn**, a runtime that identifies reusable task objects from agent–environment interactions, maintains their records across folds, and combines them with execution context and recent interactions in a compact context view.
- Improved OSWorld 2.0 partial score by **5.8 percentage points** and BrowseComp-Plus accuracy (100-question subset) by **7.0 points**, while reducing total token usage by **51.9%** and **22.9%**, respectively.

Harvard University

Feb 2026 – Apr 2026

Spatial Reasoning in Vision-Language Models

Advisor: Prof. Yilun Du

- Evaluated open- and closed-source VLMs on the 1,050-question MindCube-Tiny benchmark, analyzing failures in multi-view spatial reasoning and perspective taking.
- Studied cross-view representations using CKA and patch-level feature comparisons, probing whether observed similarities reflect spatial structure or shared appearance.
- Proposed multi-view training for SigLIP2 with geometric objectives and frozen-teacher feature distillation to strengthen spatial representations while preserving semantics.

Efficient LLM Reasoning and Agent Memory

Jun 2025 – Aug 2025

Shanghai, China

Advisors: Dr. Meng Jin and Prof. Chengwei Qin (HKUST)

- Developed an evolving A-Mem-based memory system for planning agents, combining hybrid retrieval and multi-granularity relational updates.
- Investigated inference-time reasoning efficiency through fast/slow token routing; proposed **BEGI**, combining entropy and Gini impurity to characterize competition among top token candidates.

SELECTED RESEARCH PROJECT

StyLLE: Style Learning and Latent Editing for Text and Speech

Jan 2025 – May 2025

University of Michigan; Advisor: Prof. Honglak Lee

- Explored extending DRESS-style activation steering to speech generation in SparkTTS and evaluated **Double-DRESS**, which separately steers global and semantic token streams to improve stability.